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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/002,100	11/14/2001	Jun Kishimoto	81839.0106	3823

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EXAMINER

DEO, DUY VU NGUYEN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 06/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/002,100

Applicant(s)

KISHIMOTO, JUN

Examiner

DuyVu n Deo

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 November 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/447,309.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1, 6, 7 are rejected under 35 U.S.C. 102(b) or 102 (e) as being anticipated by admitted prior art (pages 1-3 of the specification).

There is no clear indication of when the admitted prior art described in pages 1-3 of the specification is published; therefore, the rejection at this time is either 102(b) or 102(e).

Admitted prior art in pages 1-3 of the specification describes a semiconductor wafer. The wafer is obtained by surface-grinding the front or both surfaces of the wafer (claimed flattening one of the surfaces by a surface-grinding means); double side polishing of the wafer; mirror-polishing the front surface of the wafer (page 1). The other surface that is subjected to surface grinding and not to mirror-polishing would have to be the back surface of the wafer. Even though admitted prior art is silent about etching both surfaces of the wafer. However, as described in page 1, the etching step is to remove a mechanical damage layer from the lapping step, which laps both the front and back surface. Therefore, the etching step must etch both the front and back surface to remove the mechanical damage layer on the front and back surface.

Referring to claim 6, even though admitted prior art doesn't describe the front surface is without being subjected to surface-grinding. However, the end product would also be the same as claimed product since it has a mirror-polished front surface as described above and a back surface having micro roughness formed during surface-grinding with a P-V value of 30-50nm and intervals of 1-10 mm (page 2 of the specification) and this would read on claim 7. It is a burden to the applicant to show evidence that there is different in the product of the admitted prior art and claimed product. Please see *Ex parte Jungfer* 18 USPQ 2d 1796, 1800 (BPAI 1991); *Bristol-Myers Co. v. U.S. International Trade Commission* 15 USPQ 2d 1258 (Fed. Cir. 1989); *Ex parte Allen* 2 USPQ 2d 1425,1427 (BPAI 1987); *In re Thorpe* 227 USPQ 964 (Fed. Cir. 1985); *In re Dike* 157 USPQ 581 (CCPA 1968); *In re Stephens* 145 USPQ 656 (CCPA 1965); *In re Hoeksema* 141 USPQ 733,736 (CCPA 1964); *In re Smith* 74 USPQ 207 (CCPA 1947). Burden is on applicants to show differences in product comparisons. *Ex parte Gray* 10 USPQ 2d 1922, 1925 (BPAI 1989).

3. Claims 1, 6 are rejected under 35 U.S.C. 102(e) as being anticipated by Hajime et al. (US 5,756,399).

Hajime teaches a semiconductor wafer which has 2 sides (col. 1, line 45-60). This would read on claimed a wafer has opposite front and back surfaces. The wafer also has micro roughness remains on the back surface since he also teaches that either surface can be subjected to surface grinding (col. 1, line 56-57). This would also read on claimed the front side is without being subjected to surface-grinding.

Even though, he describes the wafer is formed by different method. However, his product would read on claimed semiconductor wafer since a product can be formed by different methods. It is a burden to the applicant to show evidence that there is different in the product of the admitted prior art and claimed product. Please see *Ex parte Jungfer* 18 USPQ 2d 1796, 1800 (BPAI 1991); *Bristol-Myers Co. v. U.S. International Trade Commission* 15 USPQ 2d 1258 (Fed. Cir. 1989); *Ex parte Allen* 2 USPQ 2d 1425,1427 (BPAI 1987); *In re Thorpe* 227 USPQ 964 (Fed. Cir. 1985); *In re Dike* 157 USPQ 581 (CCPA 1968); *In re Stephens* 145 USPQ 656 (CCPA 1965); *In re Hoeksema* 141 USPQ 733,736 (CCPA 1964); *In re Smith* 74 USPQ 207 (CCPA 1947). Burden is on applicants to show differences in product comparisons. *Ex parte Gray* 10 USPQ 2d 1922, 1925 (BPAI 1989).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

Art Unit: 1765

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hajime et al. (US 5, 756,399) and Kato et al. (US 5,800,725).

Hajime describes the product produced by a different method in which the front surface is subjected to a mirror-polishing step. Kato teaches a method for forming a semiconductor wafer where he describes the front surface is subjected to a mirror-polishing step (col. 2, line 27-30). It would have been obvious for one skill in the art to add a mirror-polishing step in light Kato in order to have final mirror surface of the wafer (col. 1, line 24-26).

6. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hajime or Hajime/Kato as applied to claim 6 above, and further in view of admitted prior art.

Unlike claimed invention, Hajime doesn't describe the micro roughness on the back surface has P-V value of 30-50nm and intervals of 1-10 mm. Admitted prior art describes a semiconductor wafer having micro roughness on the back surface has P-V value of 30-50nm and intervals of 1-10 mm (page 2 of specification) that come from the conventional grinding and polishing process. Since Hajime also describes either surface (this would also include the back surface) is done by grinding and polishing process, the back surface would have similar or the same P-V and intervals as that of the claimed invention. Even if it not the case, it would have been obvious to one skill in the art at the time of invention to determine the micro roughness in light of admitted prior art because admitted prior art describes furthers processing parameters that is silent by Hajime. Also as described in page 3, lines 1-6 of the specification that it is important or desired to be able to distinguish between the front and back surface of the wafer.

Art Unit: 1765

Therefore, it would be obvious that the micro roughness on the back surface would have to be determined through test runs for the distinguishing between the front and back surface.

Drawings

7. Figure 1B should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD
June 16, 2003

A handwritten signature in cursive script, likely belonging to the examiner, is located below the date.